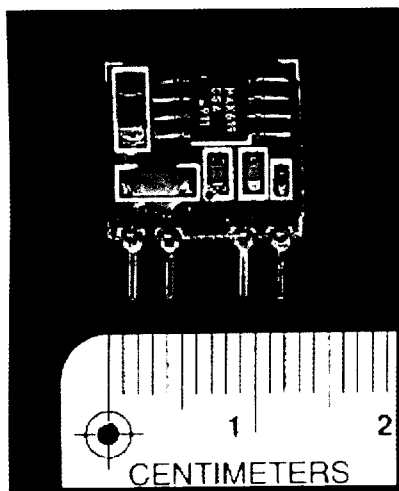




MiniPower 20

DC to DC Converter

PRELIMINARY

SPECIFICATIONS

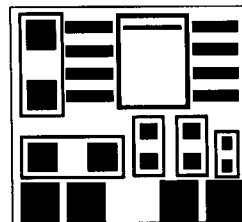
(TA=+25 C)

PARAMETER	COND.	MIN	MAX
Input Voltage (1)			+ 5.5V
Operating Voltage (2)		+ 2V	+ 3.6V
Output Voltage (Typical)	No Load 5V		$\pm 4\%$ ($\pm 1\%$)
Max. Output Current (3) 2.0 to 3.1V Input	5V $\pm 4\%$ (Typical)	<u>20mA</u> (<u>36mA</u>)	50mA (72mA)
Output Ripple (4) (Average)	2.0V to 3.1V In		55mV ($< 35\text{mV}$)
Switching Frequency	Full Load		500kHz

1. Inputs greater than 5.5V may cause damage!
2. Typical operation down to 1.8Vin with 18mA load.
3. No thermal overload protection – Output current in excess of specification for extended periods may damage circuit!
4. Maximum when Vin is between 2.5V and 3.0V, (Transition region between *doubling* and *tripling*)

CONFIGURATION

Leave open, or ground SHUTDOWN pin for normal operation - Tie to V in to shut down.
(DO NOT EXCEED V in +0.3V)



V in V out GND SHUTDOWN

Congratulations! You have purchased the finest miniature Switch-Mode power supply for your projects. Due to its high efficiency this converter operates over the full life of two alkaline cells. By design, the MiniPower regulator discharges a battery under **constant-power**, which provides for the most efficient use of the battery's energy, and will continue to provide power until the batteries are completely exhausted. The MiniPower 20 is a charge-pump circuit which acts as a voltage doubler or tripler as required to supply a regulated 5V to the load. By contrast, a typical linear shunt regulator providing 5V from a 9V "transistor" battery will not fully discharge the battery before falling out of regulation, while "throwing away" 4V as heat in the process. The typical 9V battery costs about twice as much, and has a fraction of the capacity of two AA-size cells. Your new MiniPower converter has been engineered with the finest components available to provide trouble-free performance.

FEATURES

- 5V $\pm 4\%$ Output
(Vin= 2.0V to 3.6V @ 20mA)
(Vin= 3.0V to 3.6V @ 50mA)
- $> 70\%$ Average Efficiency
(2.0V to 3.1V input, Min to Max load)
- Low Switching Ripple ($< 35\text{mV}$ Avg.)
- Shutdown Input
- Very Low EMI – No Inductor
- Ultra-Small SIP Package